ALLIED
Vision Technologies

Allied Vision Technologies

Camera Lineup 2013

Allied Vision Technologies: Leading in the World of Digital Cameras

Founded in the year 1989, Allied Vision Technologies (AVT) is a global leading manufacturer of digital machine vision cameras. AVT cameras are well suited for a wide variety of vision applications including industrial inspection, scientific and medical imaging, logistics, security, traffic surveillance and even multimedia and interactive entertainment.

High-Quality Products and Service

As a global market leader, Allied Vision Technologies is committed to the highest quality standards in the industry. All AVT cameras are manufactured in the company's own facilities in Germany and Canada by highly qualified staff according to an ISO 9001-certified total quality management.
Purchasing a camera from AVT also means relying on first-class service and excellent world-wide technical support. Selected distributors in more than 30 countries and dedicated AVT staff in Europe, North-America and Asia ensure a high level of support during the whole life cycle of a camera.

Cameras for all Applications

AVT offers one of the largest camera portfolios with digital interfaces in the market, featuring a large number of monochrome, color and infrared-sensitive sensors in resolutions from VGA (0.3 MPixels) up to 29 MPixels. The different camera families provide a large choice of form factors, image optimization functions and interfaces for any application. Beside standard models for mainstream machine vision applications, for example, quality control, the AVT portfolio also includes high-performance cameras in the visible and non-visible spectrum for demanding applications such as high-speed, infrared, medical imaging, or thermal imaging.
AVT cameras come with powerful Software Development Kits (SDKs) for several operating systems that ensure optimal performance and an easy implementation with the most popular operating systems and a large number of third party libraries.
Allied Vision Technologies is also well recognized in the market as the specialist for camera customizations. Thanks to the AVT Modular Concept, a wide range of modifications such as angled heads, optical filters, board-level versions, medical housings or alternative cable outlets are available "à la carte". Allied Vision Technologies also has a strong expertise in specific OEM camera development.

Contact and Expert Advice

For expert advice on which camera fits your application best, our experienced staff will be happy to help you choose the right camera. Allied Vision Technologies is represented in more than thirty countries worldwide. Please find the AVT branch office and the distributor sales network in your region on our website: **www.alliedvisiontec.com**

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Online Camera Selector

AVT's Online Camera Selector is a convenient online tool for displaying and sorting AVT's cameras according to your criteria. For example, if you are looking for a certain sensor model, the Online Camera Selector shows all AVT cameras with this sensor at one glance.
Among others, it is also possible to show all cameras within a resolution range (e.g., 3 to 6 Megapixels), or to display all available cameras with a particular type of sensor. You can also display cameras with the spectral range of your choice.
Additionally, all of your preferred searching criteria may be combined as requested.

Online Camera Selector on alliedvisiontec.com
http://www.alliedvisiontec.com/emea/camera-selector.html

The right camera for every application

Simple & Easy

- Economical price
- VGA to 5 Megapixels
- Sony CCD sensors, CMOSIS and Aptina CMOS sensors

Smart & Flexible

- Versatile, flexible cameras
- VGA to 29 Megapixels
- Sony and Truesense (Kodak) CCD sensors, CMOSIS sensors

Fast & Sharp

- High data rates, high speed
- VGA to 29 Megapixels
- Truesense (Kodak) and Sony CCD sensors, CMOS sensor

Special & Custom

- Cooled CCD cameras with Sony and Truesense (Kodak) sensors
- NIR/SWIR and LWIR cameras
- InGaAs and Microbolometer sensors

Guppy PRO. Small size, big quality.

Guppy PRO

FireWire

- Very attractive price
- Very small
- Optocoupled 12-pin I/O
- Lightweight, robust metal housing

Guppy PRO — L x W x H = 44.8 x 29 x 29 mm incl. connectors, w/o tripod and lens. Mass 80 g

Model	Interface	Resolution	MPixels	Frame rate	Sensortype	Sensor	Cell size	A/D	Memory
F-031B/C	1394b	656 x 492	0.3	123 fps	1/4 CCD	Sony ICX618	5.6 µm	14 bits	n/a
F-032B/C	1394b	656 x 492	0.3	82 fps	1/3 CCD	Sony ICX424	7.4 µm	12 bits	n/a
F-033B/C	1394b	656 x 492	0.3	85 fps	1/2 CCD	Sony ICX414	9.9 µm	14 bits	n/a
F-046B/C	1394b	780 x 580	0.5	62 fps	1/2 CCD	Sony ICX415	8.3 µm	14 bits	n/a
F-095C	1394b	1280 x 720	0.9	38 fps	1/3 CCD	Sony ICX692	4.08 µm	14 bits	n/a
F-125B/C	1394b	1292 x 964	1.2	31 fps	1/3 CCD	Sony ICX445	3.75 µm	14 bits	n/a
F-146B/C	1394b	1388 x 1038	1.4	17 fps	1/2 CCD	Sony ICX267	4.65 µm	12 bits	n/a
F-201B/C	1394b	1624 x 1234	2	14 fps	1/1.8 CCD	Sony ICX274	4.4 µm	12 bits	n/a
F-503B/C	1394b	2588 x 1940	5	13 fps	1/2.5 CMOS	Aptina MT9P031	2.2 µm	12 bits	n/a

Guppy PRO Cameras

The Guppy PRO is AVT's smallest FireWire camera. It is equipped with a fast 1394b interface and a 12-bit or 14-bit ADC. Like all other AVT cameras, the Guppy PRO has a very robust metal housing with locking screw connectors. Guppy PRO cameras have an outstanding price/performance ratio.

Options

- Modular concept:
  - Various IR cut/pass filters
  - White medical housing
  - CS/M12-Mount
  - Hirose power: out

Smart Features

- AOI, separate AOI for auto features
- Gain, exposure
- Programmable LUT, gamma
- Debayering, color correction
- Binning (b/w, only Guppy PRO F-503: color binning)
- Sub-sampling (b/w)
- Defect pixel correction (only Guppy PRO F-503)
- Image mirror (only Guppy PRO F-503)

Operating Conditions

Power requirements	DC 8 V - 36 V via 1394 cable or HIROSE
Power consumption	typ. <3.5 W (@ 12 V DC)
Operating temperature	+5 ... +45 °C ambient temperature
Storage temperature	-10 ... +70 °C ambient temperature
Regulations	CE, FCC Class B, RoHS (2002/95/EC)

Prosilica GC. Compact performance.

Prosilica GC

- Fast frame rates
- Ultra-compact, lightweight housing
- Large choice of CCD and CMOS sensors
- Fits a wide range of applications

Prosilica GC									L x W x H = 51-59 x 46 x 33 mm incl. connectors, w/o tripod and lens. Mass < 112 g
Model	**Interface**	**Resolution**	**MPixels**	**Frame rate**	**Sensortype**	**Sensor**	**Cell size**	**A/D**	**Memory**
GC650	GigE	659 x 493	0.3	90 fps	1/3 CCD	Sony ICX424	7.4 µm	12 bits	16 MB
GC655	GigE	659 x 493	0.3	119 fps	1/2 CCD	Sony ICX414	9.9 µm	12 bits	16 MB
GC660	GigE	659 x 493	0.3	119 fps	1/4 CCD	Sony ICX618	5.6 µm	12 bits	16 MB
GC750*	GigE	752 x 480	0.4	67 fps	1/3 CMOS	Aptina MT9V022	6.0 µm	10 bits	16 MB
GC780	GigE	782 x 582	0.5	64 fps	1/2 CCD	Sony ICX415	8.3 µm	12 bits	16 MB
GC1020	GigE	1024 x 768	0.8	33 fps	1/3 CCD	Sony ICX204	4.65 µm	12 bits	16 MB
GC1290	GigE	1280 x 960	1.2	32 fps	1/3 CCD	Sony ICX445	3.75 µm	12 bits	16 MB
GC1350	GigE	1360 x 1024	1.4	20 fps	1/2 CCD	Sony ICX205	4.65 µm	12 bits	16 MB
GC1380	GigE	1360 x 1024	1.4	20 fps	2/3 CCD	Sony ICX285	6.45 µm	12 bits	16 MB
GC1380H	GigE	1360 x 1024	1.4	30 fps	2/3 CCD	Sony ICX285	6.45 µm	12 bits	16 MB
GC1600	GigE	1620 x 1220	2	15 fps	1/1.8 CCD	Sony ICX274	4.4 µm	12 bits	16 MB
GC1600H	GigE	1620 x 1220	2	25 fps	1/1.8 CCD	Sony ICX274	4.4 µm	12 bits	16 MB
GC2450	GigE	2448 x 2050	5	15 fps	2/3 CCD	Sony ICX625	3.45 µm	12 bits	16 MB

*Standard version with CS-Mount

Prosilica GC Cameras

The Prosilica GC is a GigE camera with an ultra-compact, lightweight housing, fast frame rates, and auto-iris control. It offers a large choice of CCD and CMOS sensors up to 5 Megapixels and fits a wide range of applications.

Options

- CS-Mount adapters (CS-Mount not applicable for type 2/3 sensors and larger)
- IR cut filter on monochrome cameras

Operating Conditions

Power requirements	DC 5 V - 25 V via 12-pin HIROSE
Power consumption	≤ 3.8 W (@ 12 V DC)
Operating temperature	+0 ... +50 °C ambient temperature
Storage temperature	-10 ... +70 °C ambient temperature
Regulations	CE, FCC Class A, RoHS (2002/95/EC)

Smart Features

- Video-type auto-iris
- Region of Interest
- Gain, exposure
- White balance
- DSP subregion (selectable ROI for auto features)
- Binning (only CCD cameras)
- Image hold
- Recorder mode (pre/post trigger recording)
- StreamBytesPerSecond (easy bandwidth control)
- Event channel
- Chunk data
- Storable user sets

Mako. Small size – big quality.

Mako GigE Vision USB3 Vision

- Fast frame rates
- Compact, robust housing
- Popular CCD (Sony) and CMOS (CMOSIS) sensors
- GigE Vision or USB3 Vision interface

Mako — L x W x H = 61 x 29 x 29 mm incl. connectors, w/o tripod and lens. Mass tba

Model		Interface	Resolution	MPixels	Frame rate	Sensortype	Sensor	Cell size	A/D	Memory
G-030B/C*	**NEW**	GigE	659 x 493	0.3	300 fps	1/3 CMOS	CMOSIS CMV300	7.4 µm	12 bits	64 MB
G-032B/C*	**NEW**	GigE	656 x 492	0.3	90 fps	1/3 CCD	Sony ICX424	7.4 µm	14 bits	64 MB
G-125B/C*	**NEW**	GigE	1280 x 960	1.2	30 fps	1/3 CCD	Sony ICX445	3.75 µm	14 bits	64 MB
G-223B/C*	**NEW**	GigE	2048 x 1088	2	50 fps	2/3 CMOS	CMOSIS CMV2000	5.5 µm	12 bits	64 MB
G-223B NIR*	**NEW**	GigE	2048 x 1088	2	50 fps	2/3 CMOS	CMOSIS CMV2000	5.5 µm	12 bits	64 MB
G-419B/C*	**NEW**	GigE	2048 x 2048	4	25 fps	1/1 CMOS	CMOSIS CMV4000	5.5 µm	12 bits	64 MB
G-419B NIR*	**NEW**	GigE	2048 x 2048	4	25 fps	1/1 CMOS	CMOSIS CMV4000	5.5 µm	12 bits	64 MB

*All data for these cameras are preliminary

Mako Cameras

The Mako is a compact mainstream machine vision camera with an excellent price/performance ratio. It includes the latest fast and sensitive sensors, a high-quality robust housing, and PoE. Optocoupled I/Os (1 in, 3 out) ensure an easy integration. Mako cameras will be available both with GigE and USB3 Vision interface.

Options

- Modular concept:
  - Various IR cut/pass filters
  - White medical housing

Smart Features

- Region of Interest Readout
- Gain, exposure
- White balance
- DSP subregion (selectable ROI for auto features)
- LUT
- Binning (only CCD cameras)
- Image hold
- Recorder mode (pre/post trigger recording)
- StreamBytesPerSecond (easy bandwidth control)
- Event channel
- Chunk data
- Storable user sets

Operating Conditions

Power requirements	DC 8 V - 24 V via HIROSE or PoE
Power consumption	tba (@ 12 V DC)
Operating temperature	+5 ... +45 °C ambient temperature
Storage temperature	-10 ... +70 °C ambient temperature
Regulations	CE, FCC Class B, RoHS (2002/95/EC)

Stingray. Transformer camera.

Stingray

- Excellent image quality
- Advanced feature set
- Modular design: Large choice of variants
- Board level versions available

Stingray — L x W x H = 72.9 x 44 x 29 mm incl. connectors, w/o tripod and lens. Mass 92 g

Model	Interface	Resolution	MPixels	Frame rate	Sensortype	Sensor	Cell size	A/D	Memory
F-033B/C	1394b	656 x 492	0.3	84 fps	1/2 CCD	Sony ICX414	9.9 µm	14 bits	32 MB
F-046B/C	1394b	780 x 580	0.5	61 fps	1/2 CCD	Sony ICX415	8.3 µm	14 bits	32 MB
F-080B/C	1394b	1032 x 776	0.8	31 fps	1/3 CCD	Sony ICX204	4.65 µm	14 bits	32 MB
F-125B/C	1394b	1292 x 964	1.2	30 fps	1/3 CCD	Sony ICX445	3.75 µm	14 bits	32 MB
F-145B/C	1394b	1388 x 1038	1.4	16 fps	2/3 CCD	Sony ICX285	6.45 µm	14 bits	32 MB
F-146B/C	1394b	1388 x 1038	1.4	15 fps	1/2 CCD	Sony ICX267	4.65 µm	14 bits	32 MB
F-201B/C	1394b	1624 x 1234	2	14 fps	1/1.8 CCD	Sony ICX274	4.4 µm	14 bits	32 MB
F-504B/C	1394b	2452 x 2056	5	9 fps	2/3 CCD	Sony ICX655	3.45 µm	14 bits	64 MB

Stingray Cameras

The Stingray is a versatile, powerful FireWire camera even for challenging applications. Its modular and flexible design provides a large choice of variants. Stingray cameras have an excellent image quality and incorporate an advanced set of real-time features.

Options

- Board level versions available
- Modular concept:
  - Various IR cut/pass filters
  - CS/M12-Mount
  - Angled head
  - Hirose power: out
  - 1394b connectors: 2 x copper or 1 x GOF, 1 x copper
  - Compact housing version
  - White medical housing
  - Removed cover glass (Stingray F-145 only)

Smart Features

- AOI, separate AOI for auto features
- Programmable LUT, white balance, hue, saturation
- Gain, exposure
- Debayering, color correction
- Shading correction
- High SNR mode (up to 24 dB better signal-to-noise ratio)
- Sub-sampling, binning (b/w)
- Low-noise binning mode
- Defect pixel correction
- Sequence mode (changes the camera settings on the fly)
- Image mirror
- Deferred image transport
- SIS (Secure Image Signature, enhanced time stamp)
- Storable user settings

Operating Conditions

Power requirements	DC 8 V - 36 V via 1394 cable or HIROSE
Power consumption	typ. < 4 W (@ 12 V DC)
Operating temperature	+5 ... +45 °C ambient temperature
Storage temperature	-10 ... +70 °C ambient temperature
Regulations	CE, FCC Class B, RoHS (2002/95/EC)

Manta. Industrial flexibility.

Manta GigE VISION

- Very economical price
- Three programmable 12-bit LUTs, color correction
- Modular design, large choice of housing variants
- Power over Ethernet option (PoE), RS232 included

Manta									
						L x W x H = 86.4 x 44 x 29 mm incl. connectors, w/o tripod and lens. Mass < 200 g			
Model	**Interface**	**Resolution**	**MPixels**	**Frame rate**	**Sensortype**	**Sensor**	**Cell size**	**A/D**	**Memory**
G-031B/C	GigE	652 x 492	0.3	125 fps	1/4 CCD	Sony ICX618	5.6 µm	14 bits	32 MB
G-032B/C	GigE	656 x 492	0.3	80 fps	1/3 CCD	Sony ICX424	7.4 µm	12 bits	32 MB
G-033B/C	GigE	656 x 492	0.3	88 fps	1/2 CCD	Sony ICX414	9.9 µm	14 bits	32 MB
G-046B/C	GigE	780 x 580	0.5	67 fps	1/2 CCD	Sony ICX415	8.3 µm	14 bits	32 MB
G-095C	GigE	1292 x 734	0.9	40 fps	1/3 CCD	Sony ICX692	4.08 µm	14 bits	32 MB
G-125B/C	GigE	1292 x 964	1.2	30 fps	1/3 CCD	Sony ICX445	3.75 µm	14 bits	32 MB
G-145B/C (-30fps)	GigE	1388 x 1038	1.4	16/31 fps	2/3 CCD	Sony ICX285	6.45 µm	14 bits	32 MB
G-145B NIR	GigE	1388 x 1038	1.4	15 fps	2/3 CCD	Sony ICX285	6.45 µm	14 bits	32 MB
G-146B/C	GigE	1388 x 1038	1.4	17 fps	1/2 CCD	Sony ICX267	4.65 µm	14 bits	32 MB
G-201B/C (-30fps)	GigE	1624 x 1234	2	14/30 fps	1/1.8 CCD	Sony ICX274	4.4 µm	14 bits	32 MB
G-223B/C * **NEW**	GigE	2048 x 1088	2.2	50 fps	2/3 CMOS	CMOSIS CMV2000	5.5 µm	12 bits	128 MB
G-223B NIR* **NEW**	GigE	2048 x 1088	2.2	50 fps	2/3 CMOS	CMOSIS CMV2000	5.5 µm	12 bits	128 MB
G-282B/C * **NEW**	GigE	1936 x 1458	2.8	30 fps	1/1.8 CCD	Sony ICX687	3.69 µm	14 bits	128 MB
G-283B/C * **NEW**	GigE	1936 x 1458	2.8	30 fps	2/3 CCD	Sony ICX674	4.54 µm	14 bits	128 MB
G-419B/C * **NEW**	GigE	2048 x 2048	4.2	25 fps	1/1 CMOS	CMOSIS CMV4000	5.5 µm	12 bits	128 MB
G-419B NIR* **NEW**	GigE	2048 x 2048	4.2	25 fps	1/1 CMOS	CMOSIS CMV4000	5.5 µm	12 bits	128 MB
G-504B/C	GigE	2452 x 2056	5	9 fps	2/3 CCD	Sony ICX655	3.45 µm	14 bits	32 MB
G-505B/C* **NEW**	GigE	2452 x 2056	5	15 fps	2/3 CCD	Sony ICX625	3.45 µm	14 bits	32 MB
G-609B/C* **NEW**	GigE	2752 x 2206	6	15 fps	1/1 CCD	Sony ICX694	4.54 µm	14 bits	128 MB
G-917B/C* **NEW**	GigE	3384 x 2710	9	10 fps	1/1 CCD	Sony ICX814	3.69 µm	14 bits	128 MB

*All data for these cameras are preliminary

Manta cameras are optionally available with PoE (Power over Ethernet)

Manta Cameras

The Manta is a very economically priced GigE camera. Equipped with programmable LUTs and sophisticated color correction algorithms, the Manta outperforms other GigE cameras in this price class. In addition, board level versions as well as modular options are available. The robust metal housing features optimal quality to ensure a long lifetime.

Options

- Board level versions available
  - Remote sensor head, cable length up to 200 mm
- Modular concept:
  - Various IR cut/pass filters
  - CS/M12-Mount adapters
  - Angled head
  - White medical housing
  - Power over Ethernet
  - Removed cover glass (Manta G-145 only)

Smart Features

- Video-type auto-iris
- ROI (Region of Interest Readout)
- Gain, exposure, white balance
- DSP subregion (selectable ROI for auto features)
- Hue, saturation, sharpness
- Three programmable LUTs, gamma
- Binning, decimation/sub-sampling (not Manta G-032B/C)
- Image hold
- StreamBytesPerSecond (easy bandwidth control)
- Event channel, chunk data
- Recorder mode (pre/post trigger recording)
- Five storable user sets

Operating Conditions

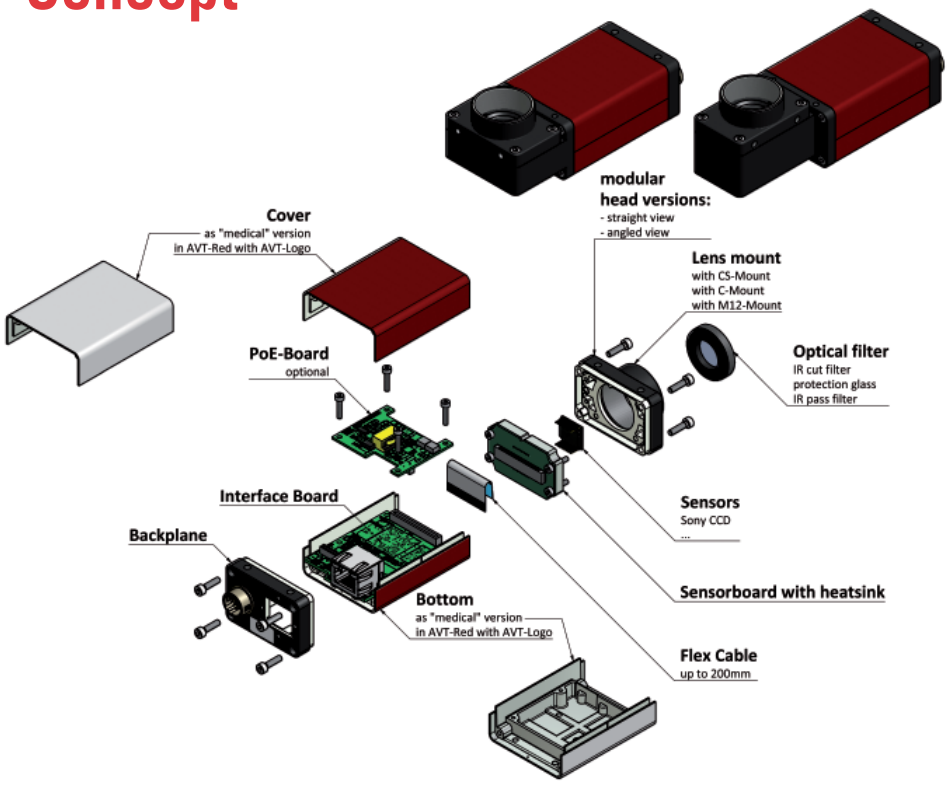
Power requirements	DC 8 V - 30 V via 12-pin HIROSE/PoE
Power consumption	< 3.6 W; 30fps/PoE <4.6 W (@ 12 V DC)
Operating temperature	+0 ... +45 °C ambient temperature
Storage temperature	-10 ... +70 °C ambient temperature
Regulations	CE, FCC Class B, RoHS (2002/95/EC)

The AVT Modular Concept

In addition to a comprehensive selection of standard cameras, AVT also offers customized cameras. Many customizing requirements can be covered by the Modular Concept, which provides options to change the camera's form factor, optical filters, and some other options like PoE (Power over Ethernet), angled heads, or several lens mounts. The Modular Concept is available for all AVT cameras. **Each camera family offers different modular options.**

Benefits:

- Reduces customizing effort
- Permits immediate orders
- Leads to quick delivery times
- Offers transparent pricing
- Optimizes the cameras for your needs



Prosilica GT. Weather persistent.

Prosilica GT

- Wide operating temperature range
- High sensitivity and high speed
- P-iris and DC auto iris lens control
- PoE (Power over Ethernet), RS232 included

Prosilica GT										L x W x H = see below* incl. connectors, w/o tripod and lens. Mass 210 -372 g
Model		**Interface**	**Resolution**	**MPixels**	**Frame rate**	**Sensortype**	**Sensor**	**Cell size**	**A/D**	**Memory**
GT1290		GigE	1280 x 960	1.2	33 fps	1/3 CCD	Sony ICX445	3.75 µm	14 bits	128 MB
GT1380		GigE	1360 x 1024	1.4	30 fps	2/3 CCD	Sony ICX285	6.45 µm	14 bits	128 MB
GT1600		GigE	1620 x 1220	2	25 fps	1/1.8 CCD	Sony ICX274	4.4 µm	14 bits	128 MB
GT1660	**NEW**	GigE	1600 x 1200	1.9	62 fps	2/3 CCD	Truesense KAI-02050	5.5 µm	14 bits	128 MB
GT1910		GigE	1920 x 1080	2	57 fps	2/3 CCD	Truesense KAI-02150	5.5 µm	14 bits	128 MB
GT1920		GigE	1936 x 1456	2.8	40 fps	2/3 CCD	Sony ICX674	4.54 µm	14 bits	128 MB
GT2000**	**NEW**	GigE	2048 x 1088	2.2	53 fps	2/3 CMOS	CMOSIS CMV2000	5.5 µm	12 bits	128 MB
GT2050**	**NEW**	GigE	2048 x 2048	4.2	28 fps	1/1 CMOS	CMOSIS CMV4000	5.5 µm	12 bits	128 MB
GT2300		GigE	2336 x 1752	4	29 fps	1/1 CCD	Truesense KAI-04050	5.5 µm	14 bits	128 MB
GT2450		GigE	2448 x 2050	5	15 fps	2/3 CCD	Sony ICX625	3.45 µm	14 bits	128 MB
GT2750		GigE	2750 x 2200	6	19 fps	1/1 CCD	Sony ICX694	4.54 µm	14 bits	128 MB
GT3300		GigE	3296 x 2472	8	14 fps	4/3 CCD	Truesense KAI-08050	5.5 µm	14 bits	128 MB
GT3400	**NEW**	GigE	3384 x 2704	9.2	12 fps	1/1 CCD	Sony ICX814	3.69 µm	14 bits	128 MB
GT4100**	**NEW**	GigE	4096 X 3072	12.6	7.5 fps	APS-C CMOS	CMOSIS CMV12000	5.5 µm	12 bits	128 MB
GT4905**	**NEW**	GigE	4896 X 3264	16	7.5 fps	APS-H CCD	Truesense KAI-16050	5.5 µm	14 bits	128 MB
GT4907**	**NEW**	GigE	4896 x 3232	15	7.6 fps	35 mm CCD	Truesense KAI-16070	7.4 µm	14 bits	128 MB
GT6600**	**NEW**	GigE	6576 x 4384	29	4 fps	35 mm CCD	Truesense KAI-29050	5.5 µm	14 bits	128 MB

* L x W x H = 86-92 x 53.3 x 33 mm (GT1290 ... GT2750); 121 x 59.7 x 59.7 mm (GT3300); 96 x 66 x 53.3 mm (GT4905 ... GT6600)

**All data for these cameras are preliminary

Most Prosilica GT cameras feature DC and P-iris auto-iris lens control. Users can control and automate the iris position via the GigE interface. P-iris relies on stepper motors with reproducable positions. P-iris enables remote adjustment of the lens F-number to optimize the iris opening during changing lighting conditions.

Prosilica GT Cameras

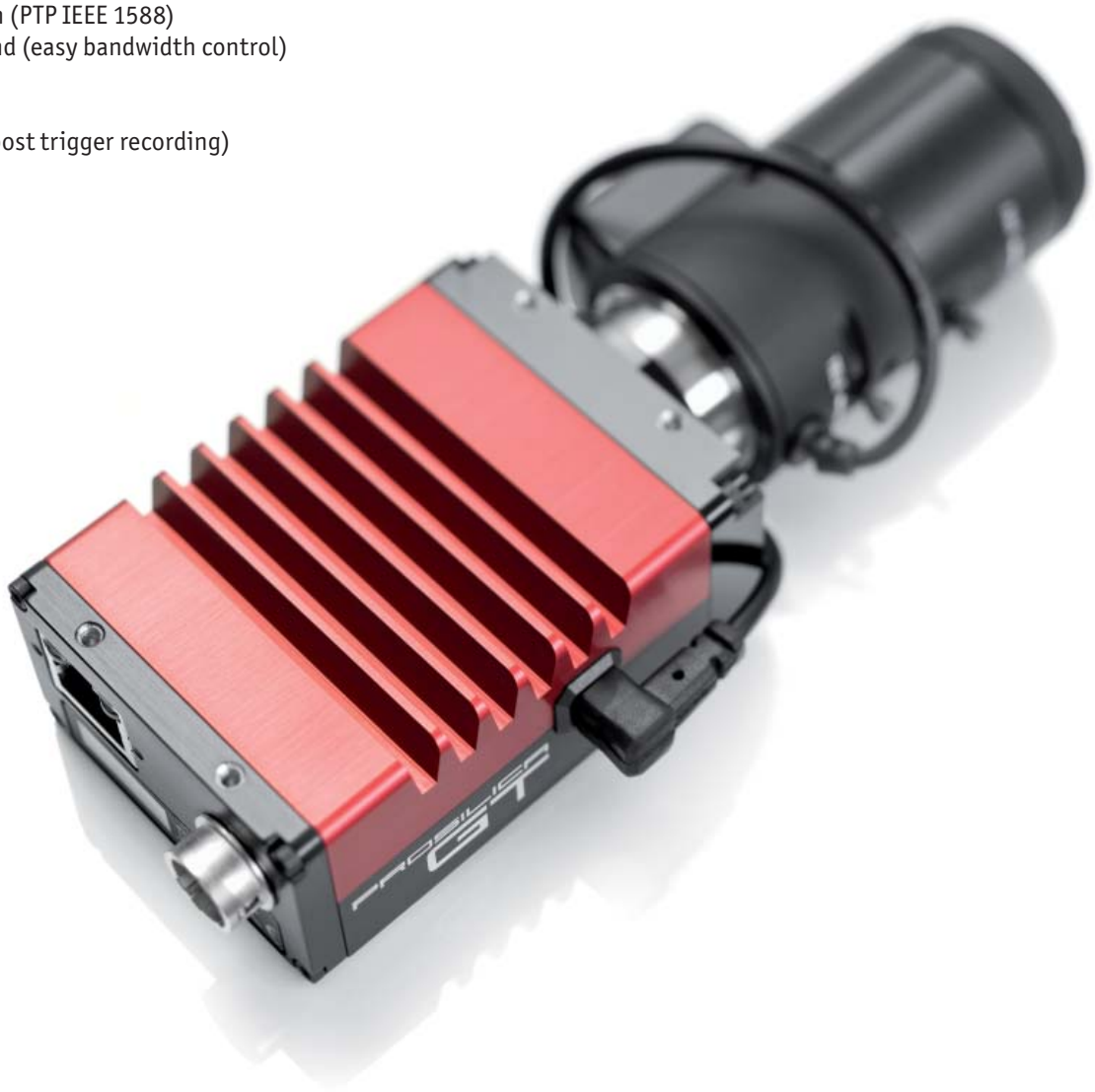
The Prosilica GT is prepared to face the elements. Designed for ITS and outdoor imaging in extreme temperatures as well as fluctuating lighting conditions, the GT is geared up with a rugged, thermally engineered housing and motorized lens control. It's also packing the most sensitive Sony EXview HAD CCD sensors, CMOSIS sensors, fast Truesense sensors, an advanced feature set, and a Power over Ethernet connection.

Operating Conditions

Power requirements	DC 7 V - 25 V via 12-pin HIROSE/PoE
Power consumption	≤ 6.6 W (@ 12 V DC)
Operating temperature	-20 ... +60 °C ambient temperature
Storage temperature	-20 ... +70 °C ambient temperature
Regulations	CE, FCC Class A, RoHS (2002/95/EC)

Smart Features

- Auto iris (P-iris and DC iris) (except for GT4100, GT4905, GT4907, and GT6600)
- Gain, exposure
- White balance
- Gamma
- Binning
- Stream hold
- Clock synchronization (PTP IEEE 1588)
- StreamBytesPerSecond (easy bandwidth control)
- Event channel
- Chunk data
- Recorder mode (pre/post trigger recording)
- Storable user sets



Pike. High-end FireWire.

Pike

FireWire

- VGA to 16 Megapixels
- Fast frame rates
- Advanced feature set
- Modular design: Large choice of variants

Pike						L x W x H = 96.8 x 44 x 44 mm incl. connectors, w/o tripod and lens. Mass = 250 g			
Model	**Interface**	**Resolution**	**MPixels**	**Frame rate**	**Sensortype**	**Sensor**	**Cell size**	**A/D**	**Memory**
F-032B/C	1394b	640 x 480	0.3	208 fps	1/3 CCD	Truesense KAI-0340	7.4 µm	14 bits	64 MB
F-100B/C	1394b	1000 x 1000	1	60 fps	2/3 CCD	Truesense KAI-1020	7.4 µm	14 bits	64 MB
F-145B/C	1394b	1388 x 1038	1.4	30 fps	2/3 CCD	Sony ICX285	6.45 µm	14 bits	64 MB
F-210B/C	1394b	1920 x 1080	2	31 fps	1.0 CCD	Truesense KAI-2093	7.4 µm	14 bits	64 MB
F-421B/C	1394b	2048 x 2048	4.2	16 fps	1.2 CCD	Truesense KAI-04022	7.4 µm	14 bits	64 MB
F-505B/C	1394b	2452 x 2054	5	15 fps	2/3 CCD	Sony ICX625	3.45 µm	14 bits	64 MB
F-1100B/C*	1394b	4008 x 2672	11	5 fps	35 mm CCD	Truesense KAI-11002	9.0 µm	14 bits	256 MB
F-1600B/C*	1394b	4872 x 3248	16	3 fps	35 mm CCD	Truesense KAI-16000	7.4 µm	14 bits	256 MB

* F-Mount housing, L x W x H = 137 x 60 x 60 mm. Mass = 380 g

Pike Cameras

Pike cameras include fast Truesense sensors and a rich set of advanced real-time features. The Pike is a very fast IEEE 1394b camera for demanding applications. Pike cameras are available both with daisy-chain copper ports and with copper/GOF (glass optical fiber) ports.

Options

- Modular concept:
  - Various IR cut/pass filters
  - F-Mount (F-032 only: CS-Mount, M12-Mount)
  - Pike F-1100/F-1600: M42/M58-Mount
  - Angled head, white medical housing
  - Hirose power: out
  - 1394b connectors: 2 x copper or 1 x GOF, 1 x copper
- Sensor variants: Taped cover glass w/o microlenses, fixed quartz cover glass w/o microlenses available for some models

Smart Features

- Switchable tap readout (only Pike F-1100 and Pike F-1600)
- AOI, separate AOI for auto features
- Programmable LUT
- White balance, hue, saturation
- Gain, exposure
- Color correction
- Shading correction
- High SNR mode (up to 24 dB better signal-to-noise ratio)
- Smear reduction (not Pike F-1100/F-1600)
- Defect pixel correction (only Pike F-1100/F1600)
- Sub-sampling, 2x - 8x binning (b/w)
- Sequence mode (changes the image settings on the fly)
- Image mirror
- Deferred image transport
- SIS (Secure Image Signature, enhanced time stamp)
- Storable user settings

Operating Conditions

Power requirements	DC 8 V - 36 V via 1394 cable or HIROSE
Power consumption	typ. < 4 W @ 12 V DC, < 6 W (11/16 MP)
Operating temperature	+5 ... +50 °C housing temperature
Storage temperature	-10 ... +70 °C ambient temperature
Regulations	CE, FCC Class B, RoHS (2002/95/EC)

Prosilica GX. Shift up to double speed.

Prosilica GX

- High resolution with very fast frame rates
- LAG (Link Aggregation Group) technology
- 3-axis motorized lens control and auto-iris controls
- Latest Truesense and Sony CCD sensors

Prosilica GX	L x W x H (C-Mount) = 107-108 x 53.3 x 33 mm incl. connectors, w/o tripod and lens. Mass = 269-365 g								
Model	**Interface**	**Resolution**	**MPixels**	**Frame rate**	**Sensortype**	**Sensor**	**Cell size**	**A/D**	**Memory**
GX1050	GigE*	1024 x 1024	1	112 fps	1/2 CCD	Truesense KAI-01050	5.5 µm	14 bits	128 MB
GX1660	GigE*	1600 x 1200	2	66 fps	2/3 CCD	Truesense KAI-02050	5.5 µm	14 bits	128 MB
GX1910	GigE*	1920 x 1080	2	63 fps	2/3 CCD	Truesense KAI-02150	5.5 µm	14 bits	128 MB
GX1920	GigE*	1936 x 1456	2.8	40 fps	2/3 CCD	Sony ICX674	4.54 µm	14 bits	128 MB
GX2300	GigE*	2336 x 1752	4	32 fps	1/1 CCD	Truesense KAI-04050	5.5 µm	14 bits	128 MB
GX2750	GigE*	2750 x 2200	6	20 fps	1/1 CCD	Sony ICX694	4.54 µm	14 bits	128 MB
GX3300	GigE*	3296 x 2472	8	17 fps	4/3 CCD	Truesense KAI-08050	5.5 µm	14 bits	128 MB
GX6600**	GigE*	6576 x 4384	29	4 fps	35 mm CCD	Truesense KAI-29050	5.5 µm	14 bits	128 MB

*Double-speed GigE Vision interface (240 MB/s)
**Housing with F-Mount, note: larger dimensions, including the mount (diameter = 60 mm, L = 136 mm)

Prosilica GX Cameras

The Prosilica GX, with its double-speed GigE interface, is the first GigE Vision camera to feature LAG technology. Additional features include 3-axis motorized lens control as well as video-type auto-iris control.

Smart Features

- LAG Technology - 240 MByte/s
- 3-axis motorized lens control (zoom, focus, and iris)
- Video-type auto-iris
- Region of Interest Readout
- Gain, exposure
- White balance
- DSP subregion (selectable ROI for auto features)
- Binning
- Image hold
- StreamBytesPerSecond (easy bandwidth control)
- Event channel
- Chunk data
- Recorder mode (pre/post trigger recording)
- Storable user sets

Options

- CS-Mount (only GX1050)
- F-Mount (only GX1050, GX1660, GX1910, GX1920, GX2300)
- EF-Mount adapter
- Taped cover glass w/o or with microlenses (not for GX1050 and GX1920)
- IR cut filter on monochrome cameras

LAG Technology

LAG = Link Aggregation Group (IEEE 802.3ad)
The LAG technology has been used in IT networking for years and is supported by a wide range of standard Ethernet hardware (switches, interface cards, etc.). When the camera is connected by two cables to the host computer, it sees the camera as one connection at twice the normal speed (240 MB/s). The Prosilica GX can also operate using a single standard CAT-5e Ethernet cable at 120 MB/s.

Operating Conditions

Power requirements	DC 5 V - 24 V via 12-pin HIROSE
Power consumption	≤ 7.6 W (@ 12 V DC)
Operating temperature	+0 ... +50 °C ambient temperature
Storage temperature	-10 ... +70 °C ambient temperature
Regulations	CE, FCC Class A, RoHS (2002/95/EC)

Bonito. High speed, high resolution.

Bonito

- Highly flexible in speed and resolution
- Sensitive CMOS sensor with global shutter
- Very compact and lightweight
- Robust metal housing for industrial use

Bonito — L x W x H (C-Mount) = 44.2 x 80 x 70 mm incl. connectors, w/o tripod and lens. Mass 360 g

Model	Interface	Resolution	MPixels	Frame rate	Sensortype	Cell size	Sensitive area	A/D
CL-400B/C	2 x 10-tap Camera Link Full+	2320 x 1726	4	386 fps	4/3 CMOS	7 µm	16.24 x 12.08 mm	10 bits
CL-400B/C 200 fps	1 x 10-tap Camera Link Full+	2320 x 1726	4	193 fps	4/3 CMOS	7 µm	16.24 x 12.08 mm	10 bits

Bonito Cameras

The Bonito is a prime quality high speed camera. It includes a very sensitive global shutter CMOS sensor and suits for fast image acquisition of still and moving objects. Bonito cameras are the perfect choice for applications requiring fast frame rates and excellent image quality. Their robust and lightweight metal housing is designed for industrial use.

Options

- Available with C-/F-/EF-Mount

Smart Features

- Region of Interest
- Fixed pattern noise (FPN) correction
- Digital gain (selects 8 out of 10 bits for output)
- Exposure time ≥ 1.5 µs
- Offset (brightness)
- Particle image velocimetry (PIV) mode - image capturing with < 800 ns between two frames

Operating Conditions

Power requirements	DC 12 V via 15-pin D-Sub interface
Power consumption	4.2 W (@ 12 V DC)
Operating temperature	0 ... +45 °C ambient temperature
Storage temperature	-30 ... +70 °C ambient temperature
Regulations	CE, RoHS (2002/95/EC)

Bigeye. Keep cool.

Bigeye

- Dual-level Peltier cooling
- Low-noise imaging with very long exposure times
- Versions with optimized NIR sensitivity available
- Comprehensive I/O functionality

Bigeye L x W x H = 101-133 x 90 x 99-109 mm incl. connectors, w/o tripod and lens. Mass 1250-1390 g

Model	Interface	Resolution	MPixels	Frame rate	Sensortype	Sensor	Cell size	A/D
G-132B Cool	GigE	1280 x 1024	1.3	12.5 fps	2/3 CCD	Sony ICX285	6.45 µm	12 bits
G-132B NIR Cool	GigE	1280 x 1024	1.3	12.5 fps	2/3 CCD	Sony ICX285	6.45 µm	12 bits
G-283B Cool **NEW**	GigE	1928 x 1452	2.8	5.7 fps	2/3 CCD	Sony ICX674	4.54 µm	14 bits
G-629B Cool	GigE	3072 x 2048	6	0.67 fps	35 mm CCD	Truesense KAF-6303E	9.0 µm	14 bits
G-629B NIR Cool	GigE	3072 x 2048	6	0.67 fps	35 mm CCD	Truesense KAF-6303E	9.0 µm	14 bits
G-1100B Cool	GigE	4024 x 2680	11	1.58 fps	35 mm CCD	Truesense KAI-11002	9.0 µm	14 bits

Bigeye Cameras

The Bigeye is a prime quality low noise CCD camera. It satisfies even the highest expectations for excellent image quality. The Peltier cooling provides for an excellent signal-to-noise-ratio even with very long exposure times. Bigeye cameras are ideal for very demanding applications, like low light microscopy or non-destructive evaluation of photosensitive objects.

Operating Conditions

Power requirements	DC 12 V via Mini D Ribbon interface
Power consumption	Typ. <18 W, max. 37 W (@ 12 V DC)
Operating temperature	0 ... +35 °C ambient temperature
Storage temperature	-30 ... +70 °C ambient temperature
Regulations	CE, RoHS (2002/95/EC)

Bigeye NIR Cameras

The spectral ranges of Bigeye NIR cameras are optimized for both the visible spectrum and the NIR spectrum. They allow to realize demanding applications with just one camera.

Peltier Cooling

Cooling the sensor to a stabilized temperature results in a lower dark current and thus an improved image quality.

- G-132B (NIR) Cool: -20 °C
- G-283B Cool: -10 °C
- G-629B (NIR): +5 °C
- G-1100B Cool: 0 °C

Smart Features

- Gain
- Exposure time > 60 minutes
- Binning
- Three LUTs
- Gamma
- Five storable user sets

Pearleye. See the heat.

Pearleye GigE Vision

- Uncooled microbolometer sensors, LWIR 8 - 14 µm
- NETD < 80 mK @ 30 °C with f/1.0 lens
- Built-in real-time image correction
- Temperature measurement range -20° C to +80° C

Pearleye — L x W x H = 133.7 x 90 x 86 mm incl. connectors, incl. lens. Mass 790-830 g

Model	Interface	Resolution	Frame rate	Sensor		Cell size	Sensitive area	A/D
P-007 LWIR*	GigE	320 x 240	40 fps	Microbolometer	ULIS UL 03 08 1	35 µm	11.2 mm x 8.4 mm	14 bits
P-030 LWIR**	GigE	640 x 480	24 fps	Microbolometer	ULIS UL 04 17 1	25 µm	16 mm x 12 mm	14 bits

*Standard lens: 18 mm f/1.0, field of view 35° x 26° **Standard lens: 18 mm f/1.0, field of view 47.9° x 36.9°

Pearleye LWIR Cameras

Pearleye LWIR cameras are distinguished by their uncooled microbolometer sensors and a temperature reference element. With their maintenance-free sensors, the built-in long-life calibration shutter and the many image correction features, Pearleye cameras are ideally suited for industrial and scientific demands.

Smart Features

- On-chip high gain mode
- Shipped with various built-in correction data sets:
  - Bad pixel correction
  - Non-uniformity correction (NUC)
  - Drift compensation
  - Temperature linearization via LUT
- Long-life electromechanical shutter for background correction in the field

Applications

- Non-contact temperature measurements
- Industrial inspection and quality control
- Non-destructive testing
- Thermal vision (surveillance, early fire detection)
- Medical imaging
- Science and research
- Laser beam profiling
- Paper recycling, waste sorting

Options

- Other lenses available on request
- Pearleye P-007 LWIR High Temp: 0 °C to +200 °C
- Other temperature ranges on request

Operating Conditions

Power requirements	DC 12 V via 15-pin D-Sub interface
Power consumption	≤ 18 W (@ 12 V DC)
Operating temperature	+15 ... +50 °C internal sensor temp.
Storage temperature	-30 ... +70 °C ambient temperature
Regulations	CE, RoHS (2002/95/EC)

Goldeye. Infrared sees more.

Goldeye

- InGaAs NIR/SWIR sensors, spectral response 900 - 1700 nm
- 14-bit digital processing
- Robust metal housing for industrial use
- Peltier cooling for high-quality imaging and long exposure

Goldeye L x W x H (C-Mount) = 71-116 x 90 x 71-99 mm incl. connectors, w/o tripod and lens. Mass 600-1420 g

Model	Interface	Resolution	Frame rate	Sensor	Cell size	Sensitive area	A/D
P-008 SWIR	GigE	320 x 256	118 fps	InGaAs	30 µm	9.6 mm x 7.68 mm	14 bits
P-032 SWIR	GigE	636 x 508	30 fps	InGaAs	25 µm	15.9 mm x 12.7 mm	14 bits

Goldeye SWIR Cameras

Goldeye SWIR cameras incorporate high-performance InGaAs sensors. They are very sensitive in the NIR/SWIR spectrum, show excellent linearity, and tolerate intense illumination. Thanks to the 14-bit processing and the numerous image correction features, Goldeye cameras produce an outstanding, low-noise image quality.

Options and Cooling

- Optional Camera Link interface (Goldeye CL-008 NIR, CL-032 NIR)
- Optional F-Mount (only Goldeye P/CL-032)
- Peltier cooling:
  - Goldeye P-008: 0°C
  - Goldeye P-032: -5°C
  - Only Goldeye P/CL-008: cost effective version without Peltier cooling

Applications

- Thermal imaging of hot objects (> 200 °C)
- Water or moisture detection
- IR-spectroscopy
- Laser beam profiling
- Solar cell and semiconductor inspection
- Vision enhancement
- Plastic sorting
- Medical science and biology

Smart Features

- Gain
- Exposure time 5 µs - 1 s
- On-chip high gain mode
- Shipped with built-in correction data sets:
  - Non-uniformity correction (NUC)
  - Bad pixel correction
- Background correction

Operating Conditions

Power requirements	DC 12 V via 15-pin D-Sub interface
Power consumption	≤ 18 - 37 W
Operating temperature	0 ... +40° C ambient temperature
Storage temperature	-30 ... +70° C ambient temperature
Regulations	CE, RoHS (2002/95/EC)

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